

ELMO

PAN • TILT • ZOOM COLOR CAMERA



PTC-200C

INSTRUCTION MANUAL

Please read this instruction manual carefully before using this PTC-200C and keep it for future reference.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus outdoors.
6. Do not use this apparatus near water.
7. Clean only with dry cloth.
8. Do not install near heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
9. Do not touch this apparatus during lightning storms.
10. Unplug when unused for long periods of time.
11. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have been fallen onto the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

	CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN	
<p>CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



CAUTION

- Do not use any power supply other than specified.

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

- * The CAUTION label is attached on the base of product.

INFORMATION

This equipment has been tested and found to comply with the limits for Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, use, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

USER-INSTALLER

CAUTION: Your authority to operate this FCC verified equipment could be voided if you make changes or modifications not expressly approved by the party responsible for compliance to Part of the FCC Rules.

HANDLING PRECAUTIONS

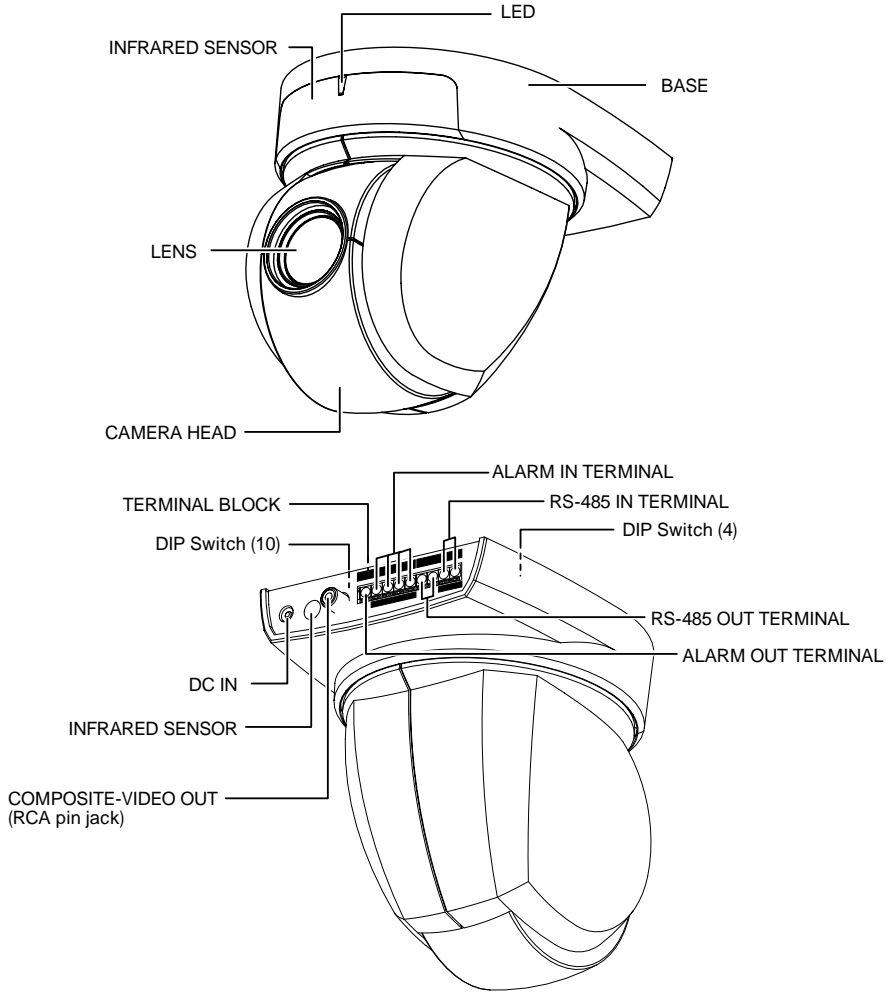
- Be sure to use the provided AC adapter.
- Do not leave the Camera under direct sunlight or by heater, or the Camera may be discolored, or damaged.
- Do not place the Camera in any humid, dusty, windy or vibrating location. Use the Camera in the following environmental condition:
 - Temperature: 0 °C ~ 40 °C (32 ° ~ 104 °F)
 - Humidity: 30% ~ 85% (No condensation)
- Use a soft, dry cloth for cleaning. Do not use any volatile solvent, such as thinner or benzine.
- Do not directly point the camera lens into the sun, or the camera may be damaged.
- Caring for the batteries:
 - If the Camera is not used for long time, remove the batteries from the remote controller.
 - Do not use rechargeable Ni-Cd batteries.
 - Do not use new and old batteries, or batteries of different type together.
 - Do not try to recharge or short-circuit the batteries.
- Do not operate the PAN/TILT motion continuously for a long time, or the life of the Camera will be shortened.

CONTENTS

IMPORTANT SAFETY INSTRUCTIONS	1
HANDLING PRECAUTIONS	3
1. PART NAMES AND FUNCTIONS.....	5
2. WIRELESS REMOTE CONTROLLER	7
3. SETTING UP	9
4. OPERATION PROCEDURES	14
[1] Power supply to the Camera	14
[2] Turning ON/OFF of the Camera power	14
[3] Operating PAN/TILT	15
[4] Lens operation	16
[5] BLC (Back Light Control).....	17
[6] Preset operation	17
5. THE ID NUMBER SETTING.....	18
6. OSD (On-Screen Display)	19
7. ALARM IN/OUT TERMINALS	22
[1] Alarm input	22
[2] Alarm output	22
8. ALL CLEAR SWITCH	23
9. RS-485	24
10. TERMINATING RESISTANCE AND ID ADDRESS SETTINGS	25
[1] Setting the terminating resistance	25
[2] Setting the ID address	25
11. TROUBLESHOOTING HINTS.....	28
12. SPECIFICATIONS.....	29
13 SUPPLIED ACCESSORIES.....	30

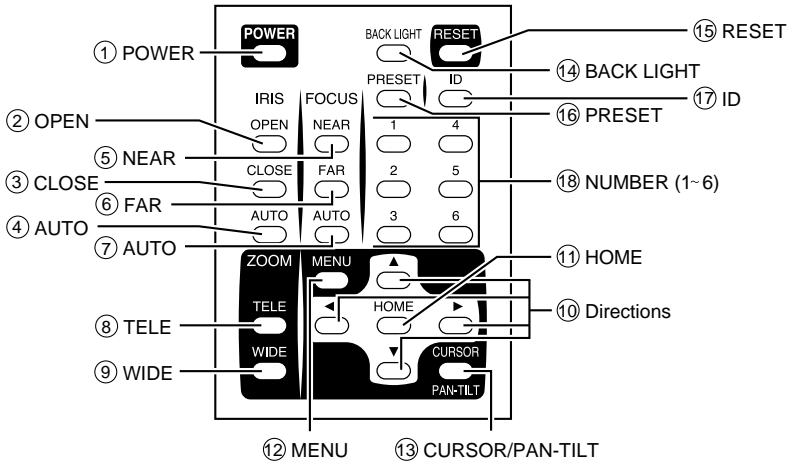
1. PART NAMES AND FUNCTIONS

● Overall View



This camera is designed to mount on ceiling panels only.

● Wireless Remote Controller



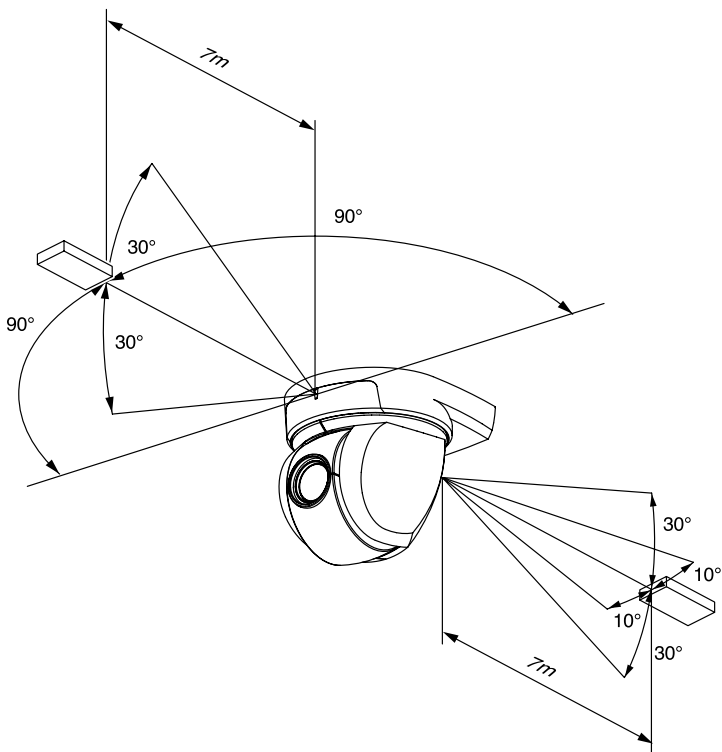
No.	Button Name	Function	Reference Page
①	POWER	To turn ON/OFF the Camera power.	P.19
②	OPEN	To open the iris manually.	P.16
③	CLOSE	To close the iris manually.	P.16
④	AUTO	To iris automatically.	P.16
⑤	NEAR	To move the focus near.	P.16
⑥	FAR	To move the focus far.	P.16
⑦	AUTO	To focus automatically.	P.16
⑧	TELE	To zoom in.	P.16
⑨	WIDE	To zoom out.	P.16
⑩	Direction (▲ ▼ ◀ ▶)	To change the Camera head direction. To operate the OSD*1 cursor.	P.15 P.19, P.20, P.21
⑪	HOME	To turn the Camera head to the front. To operate the OSD*1 cursor.	P.15 P.19, P.20, P.21
⑫	MENU	To turn ON/OFF the OSD*1 display.	P.18,P.19,P.20,P.21
⑬	CURSOR/ PAN-TILT	To switch the operation mode between the menu operation and the PAN-TILT operation.	P.19
⑭	BACK LIGHT	Back light control.	P.17, P.20
⑮	RESET	To readjust the Camera head and LENS position.	P.15
⑯	PRESET	To register the preset.	P.17
⑰	ID	To operate multiple Cameras individually.	P.14, P.18
⑱	NUMBER (1~6)	To set the preset position and the ID No.	P.17, P.18

*1 OSD (On-Screen Display)

2. WIRELESS REMOTE CONTROLLER

Point the infrared emitting window of the wireless remote controller at the infrared sensor of the Camera, located at the front, and the rear panel, and select the desired function.

● Receivable range



Note: The infrared sensors may receive the infrared rays only within a narrower receivable range or may not receive them at all depending on the ambient environment, such as being placed under the sunlight or near an inverter fluorescent lamp. In such case, relocate the installation place of the receiving side or block off the sunlight.

● Preparation

Remove the battery case cover by pressing downward on the [▼] mark part in the direction as indicated by the arrow.

Install 2 pcs. of batteries (type R03,AAA) into the case in the direction as indicated there.

Note: Install the batteries with the proper ⊕ to ⊕ and ⊖ to ⊖ polarity.

Note: For dry cells, be sure to use the size AAA.

Note: Change the batteries at least once a year or when even necessary.

Note: The batteries supplied with the Camera are only for use in initially confirming the operation of the Camera.

It is not guaranteed that these batteries will work effectively for the indicated period.

● When multiple Cameras are operated through the wireless remote controller

Refer to "5. THE ID NUMBER SETTING" on P. 18.

3. SETTING UP

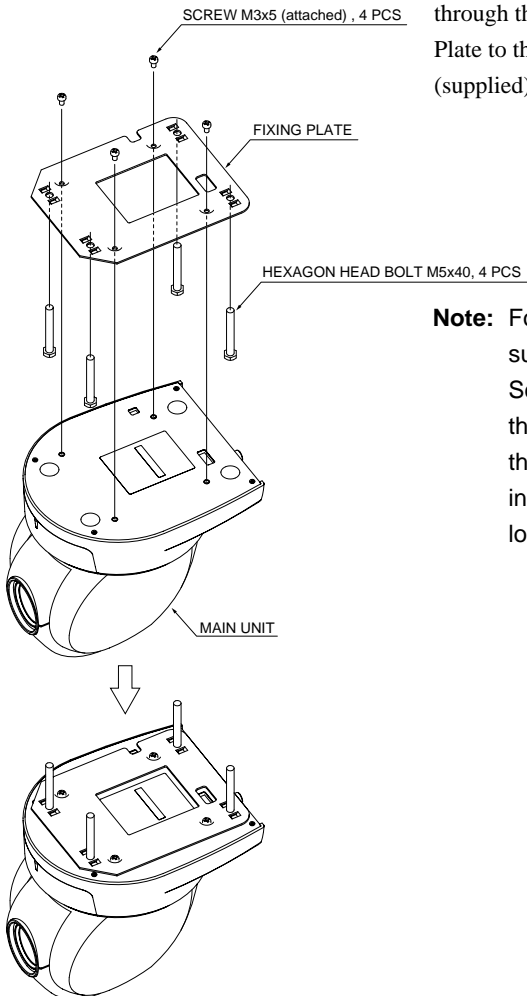
[1] Installation

Note: When carrying the Camera, be sure to hold the base.

Note: Do not turn the Camera head in the PAN-TILT direction by hand, or the Camera head may be broken.

(1) Mounting the Fixing Plate

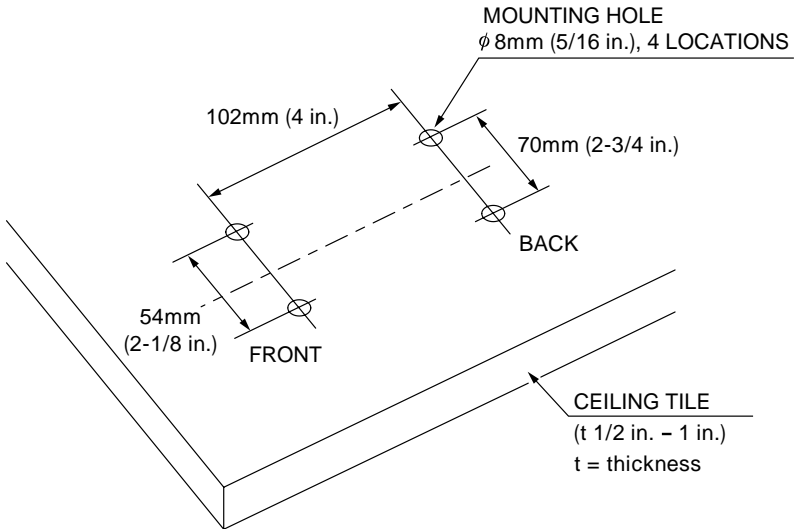
- Put 4 Hexagon Head Bolts M5x40 (supplied) through the Fixing Plate, and screw the Fixing Plate to the Main Unit with 4 Screws M3x5 (supplied).



Note: For fastening the Fixing Plate, be sure to use the 4 Phillips-head Screw M3x5 (supplied). Be careful that using any screws other than the supplied may damage the inside of the Main Unit. (Do not use longer screws)

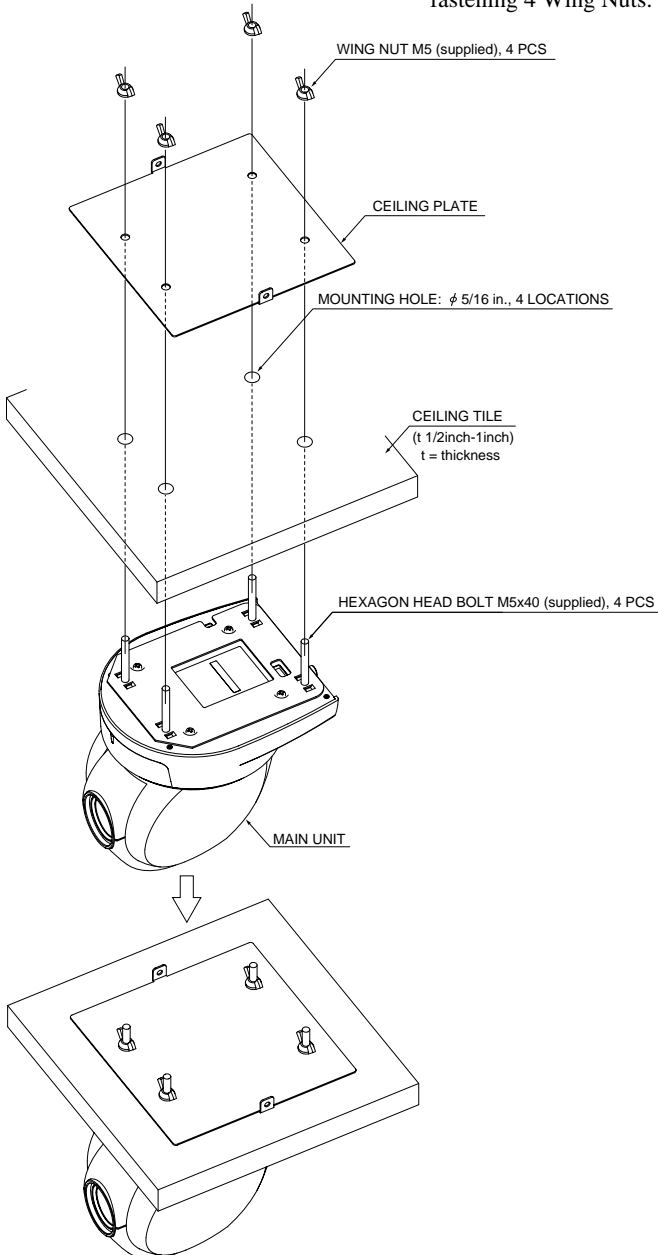
(2) Making mounting holes to the Ceiling Tile

- Make 4 holes of $\phi 8\text{mm}$ ($5/16\text{ in.}$) to the Ceiling Tile as shown.



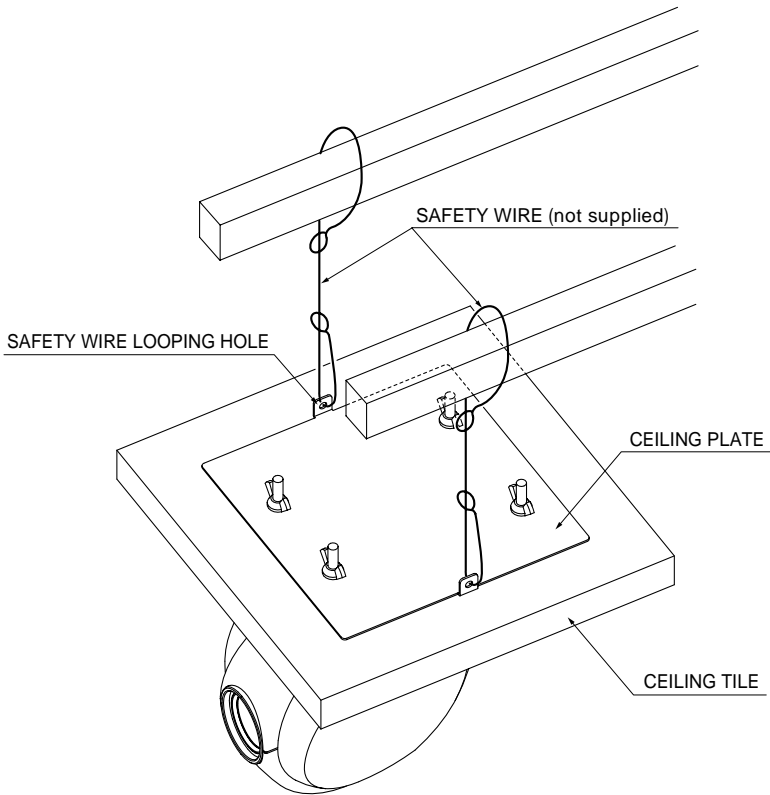
(3) Fixing the Main Unit

- Put the Ceiling Tile between the Main Unit and the Ceiling Plate, and fix the Main Unit by fastening 4 Wing Nuts.

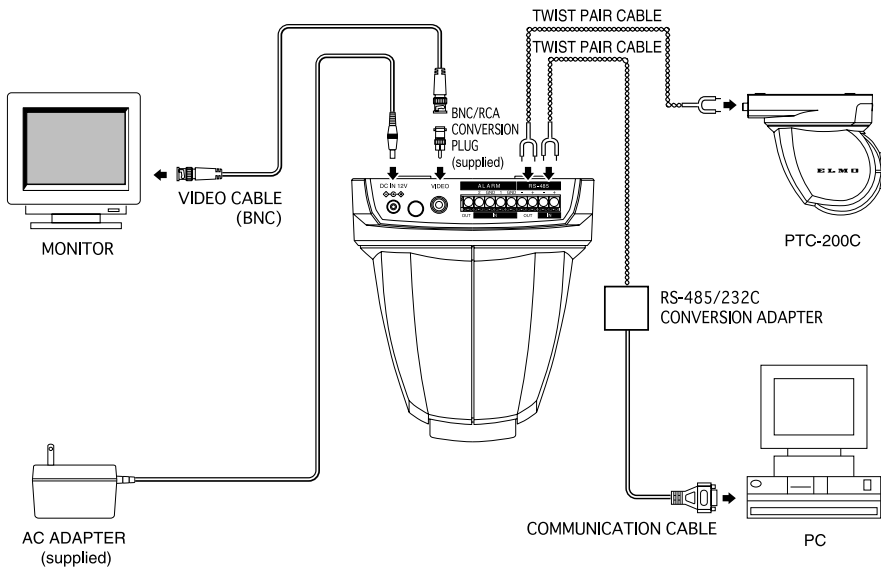


(4) Mounting the Safety Wires

- Loop up one end of the Safety Wires through the respective safety wire looping holes made on the Ceiling Plate, and then loop up the other end of the same around the beams or anything that is used to mount ceiling tile channel for structure safety.



● Connection examples for the Camera



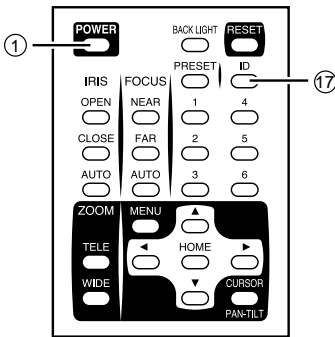
4. OPERATION PROCEDURES

[1] Power supply to the Camera

The Camera has no POWER switch. Power is supplied to the Camera when the AC adapter is connected to the wall socket and the Camera.

When power is supplied to the Camera, the Camera turns to the right and then to the center automatically (viewed from the front), returning the Camera position to the default home position.

[2] Turning ON/OFF of the Camera power



(1) Turning OFF the Camera

- When the Camera is ready for operation through the wireless remote control and ① **POWER** button is pressed, the Camera power is turned OFF. (However, even after the Camera is turned OFF, power is still being supplied to the Camera as power supply to the Camera is not OFF.)
- The image disappears, and the LED on the Camera lights up in red. Now, no buttons on the wireless remote control are functional

other than ① **POWER** button and ①⑦ **ID** button.

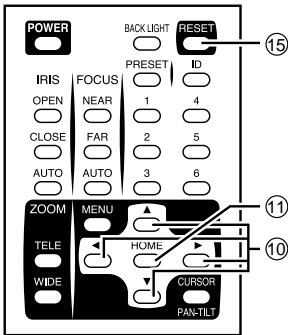
- When the TIMER OFF function is ON (refer to the settings in the OSD Menu screen), Camera power is turned OFF automatically upon the lapse of the set time.

Note: When the Camera is not in use, make it a rule to keep the Camera OFF. This will save power consumption. When the Camera is not to be used for a long time, it is advisable to unplug the AC adapter to render the Camera OFF.

(2) Turning ON the Camera

- When the Camera is OFF and ① **POWER** button is pressed, the Camera power is turned ON.
- The image appears, and the LED on the Camera goes out. Now, the Camera is ready for operation of all functions through the wireless remote control.
- If the ID number is changed (Refer to "5. THE ID NUMBER SETTING" on P.18), the Camera power may not be turned ON. In such case, redo the ID number setting, and press ① **POWER** button.

[3] Operating PAN/TILT

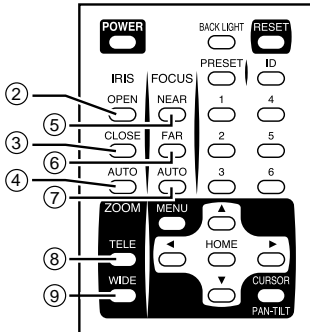


- While watching the screen, press any of ⑩ (UP, DOWN, LEFT, RIGHT) direction buttons for the direction in which you want to watch the image.
- To change the direction minutely, jog the direction button. To change the direction largely, hold down the direction button.
- Two operation modes are available according to the speed: AUTO mode changing the speed according to the zoom position, and MANUAL mode setting the

speed manually. (Refer to the settings in the OSD Menu screen.)

- When ⑪ **HOME** button is pressed, the Camera turns to the front (and the lens moves to the WIDE side).
- If the Camera direction is changed manually by mistake, press ⑮ **RESET** button. Then, the Camera remembers the last PAN/TILT position in memory.

[4] Lens operation



(1) Zoom operation

- The object is zoomed in (appears larger in the screen) when ⑧ **TELE** button of ZOOM is pressed, or zoomed out (appears smaller in the screen) when ⑨ **WIDE** button of ZOOM is pressed.
- When ⑧ **TELE** button or ⑨ **WIDE** button is held down for over one second, the zoom speed increases.

(2) Focus operation

- When ⑦ **AUTO** button of FOCUS is pressed,

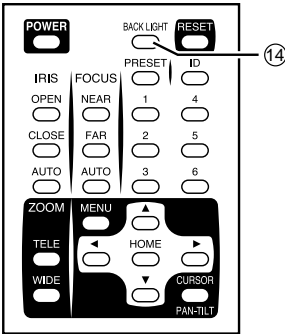
FULL AUTO FOCUS status is established. (However, focusing may be difficult for such objects as listed below.)

- Objects with no contrast between light and dark, such as white walls and night views
 - Objects reflecting an intensive light
 - Objects moving fast
 - Objects with many horizontal stripes, such as blinds
 - Objects viewed through a glass pane with water drops or stains
- To adjust the focus manually, press ⑤ **NEAR** button or ⑥ **FAR** button.
When ⑤ **NEAR** button is pressed, the focus shifts near to you.
When ⑥ **FAR** button is pressed, the focus shifts far away from you.

(3) Iris operation

- When ④ **AUTO** button of the IRIS, the AUTO IRIS status (the brightness remains unchanged even if the object is changed) is established.
- To adjust the iris manually, press ② **OPEN** button or ③ **CLOSE** button.
When ② **OPEN** button is pressed, the iris opens.
When ③ **CLOSE** button is pressed, the iris closes.

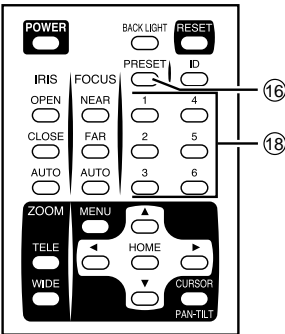
[5] BLC (Back Light Control)



In case the back lighting is too bright to shoot the main object clearly, press (14) **BACK LIGHT** button.

To cancel this mode, press the button.

[6] Preset operation



The Camera head direction, the zoom position, the focus status and the brightness level can be registered for as many as six settings.

The registration contents will be retained even if the Camera power is turned OFF.

(1) Setting presets

- Set the Camera head direction, the zoom position, the focus status and the brightness level.
- When (16) **PRESET** button is pressed, the LED on the Camera blinks in green (for 0.4

sec). To cancel this, press (16) **PRESET** button again.

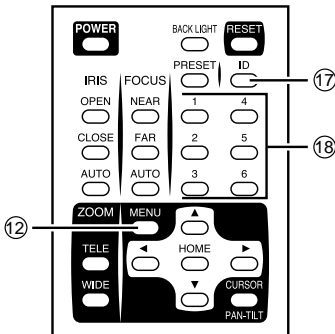
- Then, press (18) one of the **1** through **6** buttons. Now, the registration is over, and the LED on the Camera goes out. (The preset contents, if already registered, are erased and overwritten.)

(2) Execution of preset

- When (18) one of the **1** through **6** buttons are pressed, the Camera head direction, the zoom position, the focus status and the brightness level are set to that specific preset position.

5. THE ID NUMBER SETTING

When multiple Cameras are laid out adjacently and operated via the wireless remote controller, the Cameras receiving the infrared rays operate in unison in the same way. When each Camera is allocated with a different ID No., the Camera can be controlled independently when its ID No. is specified via the wireless remote controller. The ID Nos. can be allocated for up to 6 Cameras.



(1) Setting an ID No.

- Turn ON only the camera to be set with an ID No. Leave other adjacent Cameras in the OFF position. (Unplug their AC adapters from the Cameras or wall socket).
- Set the remote ID No. to the Camera. (See "6. OSD (On-Screen Display)" on P. 19.) After setting, close the Menu screen by pressing ⑫ **MENU** button. Then, repeat the ID No. setting for all other Cameras in the same way.

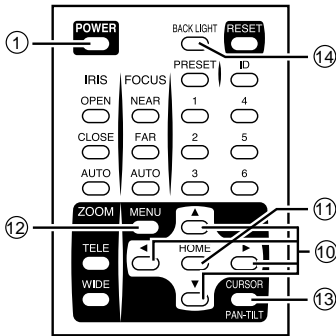
(2) Operating the Cameras selectively

- Press ⑰ **ID** button, and the LED's of all adjacent Cameras will start blinking (at intervals of 0.2 sec). (To cancel this, press ⑰ **ID** button again.) Then, press ⑱ **1** through **6** buttons, and the LED's will go out, and selective operation by specifying the ID No. will be ready. Now, only the selected Camera can be operated via the wireless remote controller.

(3) Canceling the specific ID of the Cameras

- Hold down ⑰ **ID** button for over 2 sec, and the blinking LED on the Camera will light up. Then, unhand ⑰ **ID** button. Now, the selective operation has been cancelled, and all adjacent Cameras start operation via the wireless remote controller.
- Alternatively, the selective operation by specifying the ID No. can also be cancelled by unplugging the DC jack from the Camera and turning ON the Camera power again.

6. OSD (On-Screen Display)



The ⑫ **MENU** button is used to turn ON/OFF the OSD display. When the Sub menu is displayed, the screen goes back to the previous screen.

When the OSD display is available, ⑩ ▲ ▼ ◀ ▶ direction buttons and ⑪ **HOME** button function as the menu operation keys.

To halt the menu operation and perform the PAN-TILT operation, press ⑬ **CURSOR/PAN-TILT** button. To resume the menu operation, press ⑬ **CURSOR/PAN-TILT** button again.

● OSD Display menu

<<MAIN MENU>>	
(1) MAIN CONTROL	
(2) CAMERA SETUP ▲ ▼ SELECT ⇒ ► ENTER (Return to ⑫ MENU)	
(3) TITLE SET	
(4) PAN TILT MOTOR	
(1) MAIN CONTROL ▲ ▼ SELECT ⇒ ◀ ► ADJUST (Return to ⑫ MENU)	
<1> TITLE	ON/OFF: To change the ON/OFF of the character in the bottom of the screen.
<2> SELECT	PRESET/CAMERA: To change the title to be displayed. (This setting is enabled only when the above TITLE is ON.) PRESET: To display preset position names from 1 to 6. CAMERA: To display the name of the Camera.
<3> SET INDICATE	ON/OFF: To display the preset position in the screen upon its registration (for about 2 sec).
<4> REMOTE ID	1-6: To set the ID No. of the Camera for the selective operation via the wireless remote control. If the ID No. is not to be set, set this to "0." (This has been factory set to "0.")
<5> OFF TIMER	OFF, 5min, 10min, 30min 1h, 2h, 5h: To set the time for the Low Power Consumption mode. If no operation status continues longer than the above set time, the Camera power will be turned OFF automatically. To turn ON the Camera power again, press ① POWER button. (This has been factory set to "OFF.")

<6> ALARM IN		Sets the alarm position time [10 sec (default), 20 sec, 30 sec, 1 min, 5 min, 10 min, OFF]. When the set time has passed, automatic resetting is made to the lastly executed preset position.
<7> ALARM OUT		Sets the alarm signal output time [0.1 sec (default), 0.5 sec, 1 sec, 2 sec, 5 sec, 10 sec, 30 sec].
(2) CAMERA SETUP		▲ ▼ SELECT ⇒ ◀ ▶ ADJUST (Return to ⑫ MENU)
<1> BLC		ON/OFF: To balance the difference between light and dark background. This function can also be operated easily by pressing ⑭ BACK LIGHT button on the wireless remote control.
<2> AGC		0dB, 4dB, 8dB, 12dB, 16dB, 20dB, 24dB: To adjust the maximum AGC gain.
<3> AP GAIN		-6 to +9: To adjust the contour correction level between.
<4> FL		ON/OFF: To change the ON/OFF of the flicker correction.
<5> NEXT PAGE		To go to the next screen.
<6> MEMORY		To save the current settings of the Camera by pressing ⑪ HOME button.
<7> CLEAR		To reset the settings of the Camera to the factory-settings by pressing ⑪ HOME button.
<8> WB To change the White Balance mode.	1. ATW	To adjust the white balance by way of the automatic following. (The white balance will not be effected by colors of lighting changes.)
	2. AWC	To adjust the white balance by way of one-push of button. The white balance is adjusted once by selecting the AWC mode and pressing ⑪ HOME button. When the WB mode has been changed or the R-SHIFT or B-SHIFT function has been changed, the white balance must be adjusted again by pressing ⑪ HOME button.
	3. INDOOR	To be used indoors. The color temperature is 3,200K.
	4. OUTDOOR	To be used outdoors. The color temperature is 6,300K.
	5. LIGHT	To be used under fluorescent lamps. The color temperature is 4,200K.
<9> R SHIFT *1		±30: The larger this value is, the screen is more reddish.
<10> B SHIFT *2		±30: The larger this value is, the screen is more bluish.
<11> COLOR To adjust the color.	1. R GAIN	To adjust the intensity of red.
	2. B GAIN	To adjust the intensity of blue.
	3. RY HUE	To adjust the hue of red.
	4. BY HUE	To adjust the hue to blue.
<12> PREVIOUS PAGE		To return to the previous screen.

<p>*1: <9> "R SHIFT" and <10> "B SHIFT" are available in 2 types, respectively: one for the ATW and AWC functions, and the other for the INDOOR, OUTDOOR and LIGHT functions. For example, it is possible to set "R SHIFT" to +10 in the ATW mode and to ± 0 in the INDOOR mode.</p> <p>*2: <11> "COLOR" is available for all modes irrespective of the mode of "WB".</p> <p>*3: To change and save the Camera settings, be sure to press ⑪ [HOME] button in the >MEMORY display on P. 1.</p>	
<p>(3) TITLE SET ▲ ▼ SELECT ⇒ ◀ ▶ ADJUST (Return to ⑫ [MENU])</p>	<ul style="list-style-type: none"> • To set the title for each preset position and Camera. Make the title to be set blink, and press ⑩ [▶] direction button to go to the set character. Then, set the character one by one by using ⑩ [▲] [▼] [◀] [▶] direction buttons. The types of characters that can be set are alphabetic characters in capital and small ("A" through "Z" and "a" through "z") and symbols (e.g., < > - / . :). After setting all, press ⑪ [HOME] button to save the settings.
<p>(4) PAN TILT MOTOR ▲ ▼ SELECT ⇒ ▶ ADJUST (Return to ⑫ [MENU])</p>	
<1> MOTOR SPEED	<ul style="list-style-type: none"> • To set the motor speed when the PAN-TILT function is in operation. • AUTO: The operation speed can be changed automatically according to the zoom position. • MANUAL: The operation speed can be selected freely.
<2> SPEED	<ul style="list-style-type: none"> • To set the motor speed when "MANUAL" has been selected for the motor speed. The motor speed can be changed in 8 steps from 0 to 7.
<3> L/R DIRECTION	<ul style="list-style-type: none"> • STANDARD/REVERSE: To change the PAN direction.

7. ALARM IN/OUT TERMINALS

[1] Alarm input

By short-circuiting the ALARM 1 IN or ALARM 2 IN Terminal Block to the GND terminal on the Terminal Block, the Camera moves to the allocated preset position.

- When short-circuiting the ALARM 1 IN terminal to the GND terminal, the Camera moves to the preset position 1.
- When short-circuiting the ALARM 2 IN terminal to the GND terminal, the Camera moves to the preset position 2.

Then, when the time set from the OSD menu has passed, the Camera moves back automatically to the lastly executed preset position.

- Regarding time setting, refer to the setting in the OSD menu screen.

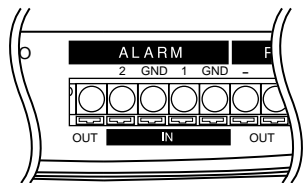
[2] Alarm output

When the alarm input signal has been activated and the Camera has moved to the specified position, the alarm signal is outputted at the ALARM OUT terminal for the time preset from the OSD menu.

- Regarding time setting, refer to the setting in the OSD menu screen.

● Pin arrangement

Terminal name	Function
1 IN	Inputs the alarm signal <1>.
GND	Grounds.
2 IN	Inputs the alarm signal <2>.
OUT	Outputs the alarm signal.



8. ALL CLEAR SWITCH

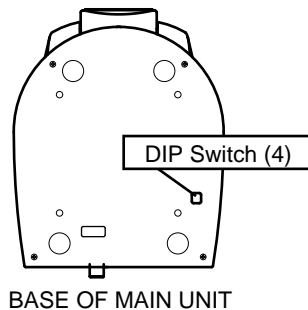
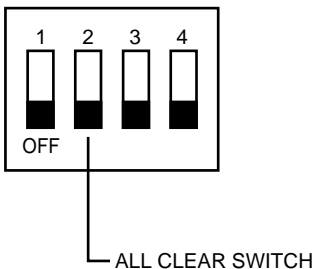
The PAN-TILT settings, the LENS settings, the preset settings, the ID settings and the Camera settings by means of the OSD can be reset to the factory-settings by turning ON the switch No. 2 of the DIP Switch (4) on the bottom of the Camera before turning ON the power supply to the Camera and then turning OFF the same switch after turning ON the power supply to the Camera.

Note: For all other switches (No. 1, No. 3 and No. 4) of the 4-DIP Switch, be sure to turn them OFF, or operation via the wireless remote controller or by other means will not work.

● Switch assignment

Switch No.	Normal	Operation	Function
1	OFF	None	N/A
2	OFF	ON → OFF	ALL CLEAR
3	OFF	None	N/A
4	OFF	None	N/A

● DIP Switch (4)



9. RS-485

This system can be controlled from the PC by connecting the RS-485 terminal on the 9-pin Terminal Block to the PC via an RS-485 converter.

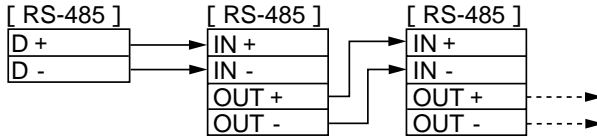
Make the connection as shown below.

Each camera can be set for the ID address via a 10-pin DIP Switch located on the bottom so that a selected camera can be controlled.

Up to 223 Cameras can be controlled from one PC.

To raise the reliability, connect the DATA (+) and the DATA (-) with a twist pair cable.

To protect this system and the PC, be sure to turn OFF the POWER switches of all units before starting the connection.

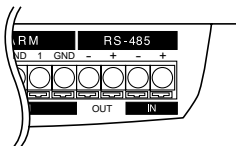


● Communication specifications

- Communication mode: Synchronous half duplex
- Communication speed: 9600bps
- Start bit: 1 bit
- Stop bit: 1 bit
- Parity bit: None

● Pin assignment

Terminal name	Signal name	Function
+IN	DATA (+)	+ side: Inputs the transmitted/received
-IN	DATA (-)	- side: Inputs the transmitted/received
+OUT	DATA (+)	+ side: Outputs the transmitted/received data.
-OUT	DATA (-)	- side: Outputs the transmitted/received data.
GND	GND	Grounds.



If you need the data format specifications and the command table, please contact our distributor.

10. TERMINATING RESISTANCE AND ID ADDRESS SETTINGS

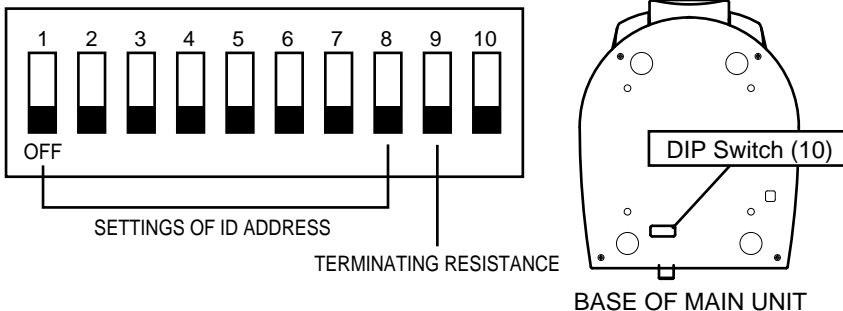
The ID address of the RS-485 and the terminating resistance can be set by using the switches Nos. 1 through 9 of the DIP Switch (10) located on the bottom of the Main Unit.

Switch No.	Function
1 – 8	Sets the ID address.
9	Turns ON/OFF the terminating resistance
10	None

[1] Setting the terminating resistance

The terminating resistance is built in each Camera, and it can be turned ON/OFF by using the pin No. 9 of the DIP Switch (10) of each Camera. To prevent the attenuation of the signal, turn ON the terminating resistances of the 2 Cameras located at both ends of the longest route, of all cameras to be connected to the RS-485 interface, and turn OFF the terminating resistances of the other Cameras.

●DIP Switch (10)



[2] Setting the ID address

The ID address for communication of the RS-485 can be set by using the switches No. 1 through 8 of the DIP Switch (10). (Refer to "Setting the ID address" table - P26, 27)

● Setting the ID address

Camera	Switch No. of DIP Switch (10)							
ID address	1	2	3	4	5	6	7	8
Disabled	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
11	ON	ON	ON	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
19	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
20	OFF	OFF	ON	OFF	ON	OFF	OFF	OFF
21	ON	OFF	ON	OFF	ON	OFF	OFF	OFF
22	OFF	ON	ON	OFF	ON	OFF	OFF	OFF
23	ON	ON	ON	OFF	ON	OFF	OFF	OFF
24	OFF	OFF	OFF	ON	ON	OFF	OFF	OFF
25	ON	OFF	OFF	ON	ON	OFF	OFF	OFF
26	OFF	ON	OFF	ON	ON	OFF	OFF	OFF
27	ON	ON	OFF	ON	ON	OFF	OFF	OFF
28	OFF	OFF	ON	ON	ON	OFF	OFF	OFF
29	ON	OFF	ON	ON	ON	OFF	OFF	OFF
30	OFF	ON	ON	ON	ON	OFF	OFF	OFF
31	ON	ON	ON	ON	ON	OFF	OFF	OFF
32	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF
33	ON	OFF	OFF	OFF	OFF	ON	OFF	OFF
34	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
35	ON	ON	OFF	OFF	OFF	ON	OFF	OFF
36	OFF	OFF	ON	OFF	OFF	ON	OFF	OFF
37	ON	OFF	ON	OFF	OFF	ON	OFF	OFF
38	OFF	ON	ON	OFF	OFF	ON	OFF	OFF
39	ON	ON	ON	OFF	OFF	ON	OFF	OFF
40	OFF	OFF	OFF	ON	OFF	ON	OFF	OFF
41	ON	OFF	OFF	ON	OFF	ON	OFF	OFF
42	OFF	ON	OFF	ON	OFF	ON	OFF	OFF
43	ON	ON	OFF	ON	OFF	ON	OFF	OFF
44	OFF	OFF	ON	ON	OFF	ON	OFF	OFF
45	ON	OFF	ON	ON	OFF	ON	OFF	OFF
46	OFF	ON	ON	ON	OFF	ON	OFF	OFF
47	ON	ON	ON	ON	OFF	ON	OFF	OFF
48	OFF	OFF	OFF	OFF	ON	ON	OFF	OFF
49	ON	OFF	OFF	OFF	ON	ON	OFF	OFF
50	OFF	ON	OFF	OFF	ON	ON	OFF	OFF
51	ON	ON	OFF	OFF	ON	ON	OFF	OFF
52	OFF	OFF	ON	OFF	ON	ON	OFF	OFF
53	ON	OFF	ON	OFF	ON	ON	OFF	OFF
54	OFF	ON	ON	OFF	ON	ON	OFF	OFF
55	ON	ON	ON	OFF	ON	ON	OFF	OFF

Camera	Switch No. of DIP Switch (10)							
ID address	1	2	3	4	5	6	7	8
56	OFF	OFF	OFF	ON	ON	ON	OFF	OFF
57	ON	OFF	OFF	ON	ON	ON	OFF	OFF
58	OFF	ON	OFF	ON	ON	ON	OFF	OFF
59	ON	ON	OFF	ON	ON	ON	OFF	OFF
60	OFF	OFF	ON	ON	ON	ON	OFF	OFF
61	ON	OFF	ON	ON	ON	ON	OFF	OFF
62	OFF	ON	ON	ON	ON	ON	OFF	OFF
63	ON	ON	ON	ON	ON	ON	OFF	OFF
64	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF
65	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF
66	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
67	ON	ON	OFF	OFF	OFF	OFF	ON	OFF
68	OFF	OFF	ON	OFF	OFF	OFF	ON	OFF
69	ON	OFF	ON	OFF	OFF	OFF	ON	OFF
70	OFF	ON	ON	OFF	OFF	OFF	ON	OFF
71	ON	ON	ON	OFF	OFF	OFF	ON	OFF
72	OFF	OFF	OFF	ON	OFF	OFF	ON	OFF
73	ON	OFF	OFF	ON	OFF	OFF	ON	OFF
74	OFF	ON	OFF	ON	OFF	OFF	ON	OFF
75	ON	ON	OFF	ON	OFF	OFF	ON	OFF
76	OFF	OFF	ON	ON	OFF	OFF	ON	OFF
77	ON	OFF	ON	ON	OFF	OFF	ON	OFF
78	OFF	ON	ON	ON	OFF	OFF	ON	OFF
79	ON	ON	ON	ON	OFF	OFF	ON	OFF
80	OFF	OFF	OFF	OFF	ON	OFF	ON	OFF
81	ON	OFF	OFF	OFF	ON	OFF	ON	OFF
82	OFF	ON	OFF	OFF	ON	OFF	ON	OFF
83	ON	ON	OFF	OFF	ON	OFF	ON	OFF
84	OFF	OFF	ON	OFF	ON	OFF	ON	OFF
85	ON	OFF	ON	OFF	ON	OFF	ON	OFF
86	OFF	ON	ON	OFF	ON	OFF	ON	OFF
87	ON	ON	ON	OFF	ON	OFF	ON	OFF
88	OFF	OFF	OFF	ON	ON	OFF	ON	OFF
89	ON	OFF	OFF	ON	ON	OFF	ON	OFF
90	OFF	ON	OFF	ON	ON	OFF	ON	OFF
91	ON	ON	OFF	ON	ON	OFF	ON	OFF
92	OFF	OFF	ON	ON	ON	OFF	ON	OFF
93	ON	OFF	ON	ON	ON	OFF	ON	OFF
94	OFF	ON	ON	ON	ON	OFF	ON	OFF
95	ON	ON	ON	ON	ON	OFF	ON	OFF
96	OFF	OFF	OFF	OFF	OFF	ON	ON	OFF
97	ON	OFF	OFF	OFF	OFF	ON	ON	OFF
98	OFF	ON	OFF	OFF	OFF	ON	ON	OFF
99	ON	ON	OFF	OFF	OFF	ON	ON	OFF
100	OFF	OFF	ON	OFF	OFF	ON	ON	OFF
101	ON	OFF	ON	OFF	OFF	ON	ON	OFF
102	OFF	ON	ON	OFF	OFF	ON	ON	OFF
103	ON	ON	ON	OFF	OFF	ON	ON	OFF
104	OFF	OFF	OFF	ON	OFF	ON	ON	OFF
105	ON	OFF	OFF	ON	OFF	ON	ON	OFF
106	OFF	ON	OFF	ON	OFF	ON	ON	OFF
107	ON	ON	OFF	ON	OFF	ON	ON	OFF
108	OFF	OFF	ON	ON	OFF	ON	ON	OFF
109	ON	OFF	ON	ON	OFF	ON	ON	OFF
110	OFF	ON	ON	ON	OFF	ON	ON	OFF
111	ON	ON	ON	ON	OFF	ON	ON	OFF

Camera	Switch No. of DIP Switch (10)							
ID address	1	2	3	4	5	6	7	8
112	OFF	OFF	OFF	OFF	ON	ON	ON	OFF
113	ON	OFF	OFF	OFF	ON	ON	ON	OFF
114	OFF	ON	OFF	OFF	ON	ON	ON	OFF
115	ON	ON	OFF	OFF	ON	ON	ON	OFF
116	OFF	OFF	ON	OFF	ON	ON	ON	OFF
117	ON	OFF	ON	OFF	ON	ON	ON	OFF
118	OFF	ON	ON	OFF	ON	ON	ON	OFF
119	ON	ON	ON	OFF	ON	ON	ON	OFF
120	OFF	OFF	OFF	ON	ON	ON	ON	OFF
121	ON	OFF	OFF	ON	ON	ON	ON	OFF
122	OFF	ON	OFF	ON	ON	ON	ON	OFF
123	ON	ON	OFF	ON	ON	ON	ON	OFF
124	OFF	OFF	ON	ON	ON	ON	ON	OFF
125	ON	OFF	ON	ON	ON	ON	ON	OFF
126	OFF	ON	ON	ON	ON	ON	ON	OFF
127	ON	ON	ON	ON	ON	ON	ON	OFF
128	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON
129	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON
130	OFF	ON	OFF	OFF	OFF	OFF	OFF	ON
131	ON	ON	OFF	OFF	OFF	OFF	OFF	ON
132	OFF	OFF	ON	OFF	OFF	OFF	OFF	ON
133	ON	OFF	ON	OFF	OFF	OFF	OFF	ON
134	OFF	ON	ON	OFF	OFF	OFF	OFF	ON
135	ON	ON	ON	OFF	OFF	OFF	OFF	ON
136	OFF	OFF	OFF	ON	OFF	OFF	OFF	ON
137	ON	OFF	OFF	ON	OFF	OFF	OFF	ON
138	OFF	ON	OFF	ON	OFF	OFF	OFF	ON
139	ON	ON	OFF	ON	OFF	OFF	OFF	ON
140	OFF	OFF	ON	ON	OFF	OFF	OFF	ON
141	ON	OFF	ON	ON	OFF	OFF	OFF	ON
142	OFF	ON	ON	ON	OFF	OFF	OFF	ON
143	ON	ON	ON	ON	OFF	OFF	OFF	ON
144	OFF	OFF	OFF	OFF	ON	OFF	OFF	ON
145	ON	OFF	OFF	OFF	ON	OFF	OFF	ON
146	OFF	ON	OFF	OFF	ON	OFF	OFF	ON
147	ON	ON	OFF	OFF	ON	OFF	OFF	ON
148	OFF	OFF	ON	OFF	ON	OFF	OFF	ON
149	ON	OFF	ON	OFF	ON	OFF	OFF	ON
150	OFF	ON	ON	OFF	ON	OFF	OFF	ON
151	ON	ON	ON	OFF	ON	OFF	OFF	ON
152	OFF	OFF	OFF	ON	ON	OFF	OFF	ON
153	ON	OFF	OFF	ON	ON	OFF	OFF	ON
154	OFF	ON	OFF	ON	ON	OFF	OFF	ON
155	ON	ON	OFF	ON	ON	OFF	OFF	ON
156	OFF	OFF	ON	ON	ON	OFF	OFF	ON
157	ON	OFF	ON	ON	ON	OFF	OFF	ON
158	OFF	ON	ON	ON	ON	OFF	OFF	ON
159	ON	ON	ON	ON	ON	OFF	OFF	ON
160	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON
161	ON	OFF	OFF	OFF	OFF	ON	OFF	ON
162	OFF	ON	OFF	OFF	OFF	ON	OFF	ON
163	ON	ON	OFF	OFF	OFF	ON	OFF	ON
164	OFF	OFF	ON	OFF	OFF	ON	OFF	ON
165	ON	OFF	ON	OFF	OFF	ON	OFF	ON
166	OFF	ON	ON	OFF	OFF	ON	OFF	ON
167	ON	ON	ON	OFF	OFF	ON	OFF	ON

Camera	Switch No. of DIP Switch (10)							
ID address	1	2	3	4	5	6	7	8
168	OFF	OFF	OFF	ON	OFF	ON	OFF	ON
169	ON	OFF	OFF	ON	OFF	ON	OFF	ON
170	OFF	ON	OFF	ON	OFF	ON	OFF	ON
171	ON	ON	OFF	ON	OFF	ON	OFF	ON
172	OFF	OFF	ON	ON	OFF	ON	OFF	ON
173	ON	OFF	ON	ON	OFF	ON	OFF	ON
174	OFF	ON	ON	ON	OFF	ON	OFF	ON
175	ON	ON	ON	ON	OFF	ON	OFF	ON
176	OFF	OFF	OFF	OFF	ON	ON	OFF	ON
177	ON	OFF	OFF	OFF	ON	ON	OFF	ON
178	OFF	ON	OFF	OFF	ON	ON	OFF	ON
179	ON	ON	OFF	OFF	ON	ON	OFF	ON
180	OFF	OFF	ON	OFF	ON	ON	OFF	ON
181	ON	OFF	ON	OFF	ON	ON	OFF	ON
182	OFF	ON	ON	OFF	ON	ON	OFF	ON
183	ON	ON	ON	OFF	ON	ON	OFF	ON
184	OFF	OFF	OFF	ON	ON	ON	OFF	ON
185	ON	OFF	OFF	ON	ON	ON	OFF	ON
186	OFF	ON	OFF	ON	ON	ON	OFF	ON
187	ON	ON	OFF	ON	ON	ON	OFF	ON
188	OFF	OFF	ON	ON	ON	ON	OFF	ON
189	ON	OFF	ON	ON	ON	ON	OFF	ON
190	OFF	ON	ON	ON	ON	ON	OFF	ON
191	ON	ON	ON	ON	ON	ON	OFF	ON
192	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON
193	ON	OFF	OFF	OFF	OFF	OFF	ON	ON
194	OFF	ON	OFF	OFF	OFF	OFF	ON	ON
195	ON	ON	OFF	OFF	OFF	OFF	ON	ON
196	OFF	OFF	ON	OFF	OFF	OFF	ON	ON
197	ON	OFF	ON	ON	OFF	OFF	ON	ON
198	OFF	ON	ON	OFF	OFF	OFF	ON	ON
199	ON	ON	ON	OFF	OFF	OFF	ON	ON
200	OFF	OFF	OFF	ON	OFF	OFF	ON	ON
201	ON	OFF	OFF	ON	OFF	OFF	ON	ON
202	OFF	ON	OFF	ON	OFF	OFF	ON	ON
203	ON	ON	OFF	ON	OFF	OFF	ON	ON
204	OFF	OFF	ON	ON	OFF	OFF	ON	ON
205	ON	OFF	ON	ON	OFF	OFF	ON	ON
206	OFF	ON	ON	ON	OFF	OFF	ON	ON
207	ON	ON	ON	ON	OFF	OFF	ON	ON
208	OFF	OFF	OFF	OFF	ON	OFF	ON	ON
209	ON	OFF	OFF	OFF	ON	OFF	ON	ON
210	OFF	ON	OFF	OFF	ON	OFF	ON	ON
211	ON	ON	OFF	OFF	ON	OFF	ON	ON
212	OFF	OFF	ON	OFF	ON	OFF	ON	ON
213	ON	OFF	ON	OFF	ON	OFF	ON	ON
214	OFF	ON	ON	OFF	ON	OFF	ON	ON
215	ON	ON	ON	OFF	ON	OFF	ON	ON
216	OFF	OFF	OFF	ON	ON	OFF	ON	ON
217	ON	OFF	OFF	ON	ON	OFF	ON	ON
218	OFF	ON	OFF	ON	ON	OFF	ON	ON
219	ON	ON	OFF	ON	ON	OFF	ON	ON
220	OFF	OFF	ON	ON	ON	OFF	ON	ON
221	ON	OFF	ON	ON	ON	OFF	ON	ON
222	OFF	ON	ON	ON	ON	OFF	ON	ON
223	ON	ON	ON	ON	ON	OFF	ON	ON

11. TROUBLESHOOTING HINTS

Symptom	Possible cause/remedy
No images on TV monitor	<ul style="list-style-type: none"> • Cable is not properly connected to the video-in terminal of monitor. • The AC adapter is disconnected from the wall AC outlet. • The AC adapter output plug is disconnected from the DC jack of the Camera. • Zoom is set at TELE to display only white/black part of the material. • The LED is lit red, and the Camera is in the OFF position. • The LED is lighting, and the OFF Timer mode of the Camera power is working. (See P.19) • The cable is not connected to each output terminal. • The iris is not in the proper position. (If the iris is fully closed, the image cannot be seen.) • The chosen video output type (NTSC) is different from the system of the monitor .
Out of focus	<ul style="list-style-type: none"> • The focus is in the Manual mode. Set the focus to the Auto mode by pressing the AUTO button of focus. (See P.16) • The light/shade contrast of the object is too low. (See P.16) • The object is moving too fast. (See P.16)
No operation via the wireless remote control	<ul style="list-style-type: none"> • Operation is made with wrong ID number settings. (See P.18) • Operate within the operation range of the wireless remote control. (See P.7) • Check the remaining battery life of the wireless remote control. • The sunlight or the light from the inverter fluorescent lamp or the like is received by the infrared sensor on the Camera. Relocate the Camera or block the light. (See P.7) • The pin No. 1 of the DIP Switch (4) is ON.
The preset position is blurry	<ul style="list-style-type: none"> • The Camera head has been moved directly due to some cause. Adjust the Camera direction by setting the "RESET" button to the normal position. (See P.15)

If the problem still remains after checking the above, consult your nearest dealer or authorized ELMO service center.

12. SPECIFICATIONS

● General

Item	Specifications		
Power source	12V DC		
Current consumption	MAX. 1A		
Outside dimensions	124mm(W) X 153mm(D) X 136mm(H) (4.9 X 6.0 X 5.4 in.)		
Weight /Mass	mainbody only: 800g (1.8 lb), with plates: 1,100g (2.4 lb)		
Television system	NTSC compatible		
Output terminal	Composite-video output	RCA pinjack/75 ohm unbalanced	1
Control terminal	RS-485	Terminal Block	1
Power terminal	EIAJ RC-5320A type4		

● Camera

Item	Specifications		
Lens	f = 4.0 - 88.0 (22-times zoom) F1.6-3.8		
Zoom	22-times powered (with double speed function) optical zoom		
Field of view (Horizontal)	2.3°- 47.5°		
Lens filter diameter	37mm (1 15/32 in.), pitch = 0.75mm (1/34 in.)		
Focusing	Full-auto/manual		
Image pick-up element	1/4" CCD		
Effective picture element	768(H) X 494(V)		
Total picture element	811(H) X 508(V) (approx. 410,000 pixels)		
Minimum illumination	2 lx		
Backlight control	ON/OFF		
Iris	Auto/manual		
White balance	ATW/push-set/manual		
Picture adjustment	Color balance, AGC gain, Edge enhancement		
Sync. System	Internal		
Resolution	More than 460 TV lines (Y signal with horizontal) More than 350 TV lines (Vertical)		
S/N ratio	49 dB		

● Pan/Tilt

Item	Specifications
Pan range	Left 150° Right 150°
Tilt range	Up 30° Down 90°
Pan Tilt Speed	Auto/manual (8 speed)

● Other

Item	Specifications
Title setting	Provided (Camera/preset selection)
Daisy chain connection	Max 223 (PTC-200C) cameras

13. SUPPLIED ACCESSORIES

Item	Quantity
AC adapter Model NO: D12-10-1000 (5Z0494) (rated input AC120V 60Hz)	1
Wireless remote controller (RCW-PTZS)	1
Batteries (Type R03,AAA)	1
BNC/RCA adaptor plug.	1
Fixing plate	1
Screw M3x5	4
Ceiling plate	1
Wing nut M5	4
Hexagon head bolt M5x40	4
Instruction manual	1

*Weight and dimensions are approximate.

*Design and specification are subject to change without prior notice.

Trademark Acknowledgements

ELMO ,ELMO are registered trademarks of ELMO CO.,Ltd.

WARNING:

- Unauthorized recording of copyrighted, materials, photographs, etc. may infringe on the rights of copyright owners and be contrary to copyright laws.



ELMO CO., LTD.

6-14, Meizen-cho, Mizuho-ku,
Nagoya, 467-8567, Japan

OVERSEAS SUBSIDIARY COMPANIES

U.S.A

Elmo Mfg. Corp.

1478 Old Country Road, Plainview, NY 11803-5034

Tel:(516)501-1400 Fax:(516)501-0429

E-mail:elmo@elmousa.com

Web : <http://www.elmousa.com>

Canada

Elmo Canada Mfg. Corp.

44 West Drive, Brampton, Ontario L6T 3T6

Tel:(905)453-7880 Fax:(905)453-2391

E-mail : info@elmocanada.com

Web : <http://www.elmocanada.com>

Germany

Elmo (Europe) G.m.b.H

Neanderstr. 18, 40233 Düsseldorf

Tel:(0211)376051 Fax:(0211)376630

E-mail : elmoeurope@AOL.com

Web : <http://www.elmo.de>

Printed in Japan
6X1PTZC02

- Receivable range